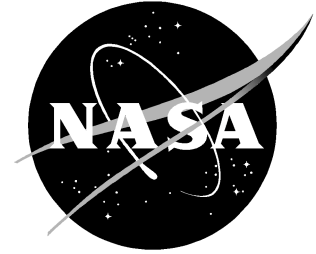


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TUESDAY, JANUARY 13 **TWISTING IN THE WIND, WITHOUT LOSING SHAPE**

Excessive twisting can cause big trouble for airplanes, bridges and buildings. Many of nature's beams and columns seem, by design, to have low twisting stiffness compared to their flexural stiffness. For example, low twisting stiffness allows insect wings and bird feathers to twist as needed to maintain appropriate angles of attack and with minimal drag in high winds.

Dr. Steven Vogel, professor of biology, Duke University, will speak on "From Flower Stems to Feather Shafts: Twisting in the Wind Without Getting Bent Out of Shape" at a colloquium at 2 p.m., Tuesday, Jan. 13, at NASA Langley's H.J.E. Reid Conference Center.

A media briefing will be held at 1:15 p.m. at the H.J.E. Reid Conference Center, 14 Langley Blvd., NASA Langley Research Center. Members of the media who wish to attend should contact Kimberly W. Land at (757) 864-9885 or 344-8611 (mobile) to arrange for credentials.

Vogel will take a look at what nature does to push us toward designs where shapes change under load amounts.

In 1966, Vogel joined the faculty of Duke University after receiving a doctorate in biology at Harvard University. He researches the mechanical factors that underlie the designs of organisms by looking at how especially small insects fly, how leaves are shaped both to stay cool in near-still air and to minimize drag in storm-level winds and how creatures such as squid and whales use the currents around them to re-expand their mantles and oral cavities.

Author of a number of books, Vogel's two recent books - *Cats' Paws and Catapults*, and *Prime Mover* - explore the intersections of biomechanics, human technology and human culture. His newest is an undergraduate textbook, *Comparative Biomechanics*.

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